

# Mineral Industry Surveys

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## COPPER IN OCTOBER 1999

Average daily mine production continued its downward trend in October and was down by about 3% compared with that of September and 23% compared with that of October 1998. Average daily primary smelter and refinery production were both down by about 4% in October, and 55% and 17%, respectively, from production in October 1998. Note, however, that smelter production reported for October 1998 was unusually high.

Commensurate with smelter closures and downstream refinery cutbacks, refined copper inventories held at refineries have fallen steadily over the past 6 months and at the end of October were down by 72% from those held at the end of April when producer inventories were at their highest level since yearend 1997. Refinery inventories were down by 61% from those in October 1998.

Average daily consumption of refined copper in October was essentially unchanged from that of September as well as that of October 1998. Consumption for the first 10 months of 1999 was up by about 3% compared with that of the same period in 1998. Note that consumption at "other plants" was revised upward to reflect final 1998 consumption data for these plants.

Domestic industrial demand for copper semifabricates is projected to continue its upward trend in the year 2000. Demand for refined copper, however, is expected to be relatively flat or decline owing to the closure 1999 of two domestic wire rod mills having a combined capacity of about 240,000 tons. In June, BHP Copper Corp. announced the closure of its San Manuel, AZ, facilities, including phase-out of its wire rod mill (see Copper in June 1999). In August, Superior Essex, a subsidiary of Superior TeleCom Inc., announced that it was rationalizing electrical wire manufacturing facilities and was closing plants at several locations, including its 65,000-ton-per-year wire rod mill in Pauline, KS, by yearend. It was expected that some of the lost capacity would be recovered from increased production at its other wire rod mills (Superior Essex, 1999). Increased imports of wire rod were expected to compensate for any shortfall in domestic production. In September and October, the Bureau of the Census reported

about 9,000 tons and 3,000 tons, respectively, of wire rod imports from Brazil. Prior to September, year-to-date imports of wire rod from Brazil amounted to less than 300 tons, and no imports were reported for 1998.

According to a recent analysis of sulfuric acid markets, the recent closure of three domestic copper smelters could have a major impact on sulfuric acid markets. The three smelters (El Paso, TX; Hidalgo, NM; and San Manuel, AZ) produced roughly 2 million tons of sulfuric acid per year. According to industry sources, their exit from the market began to be felt as early as February, following closure of ASARCO Incorporated's El Paso, TX, smelter. Though consumers have reportedly been successful in securing alternative supplies, the closures have altered the U.S. acid market from one of surplus to one of tight supply. Major consumers of acid have reportedly secured acid from increased imports or through increased burning of elemental sulfur to produce acid. Smaller consumers in the Southwest such as the chemical, paper, and water treatment industries, however, have reportedly experienced difficulties in securing reliable supplies. Opinions were mixed as to the outlook for supply adequacy, especially given Phelps Dodge Corp.'s announced plan to expand solvent extraction electrowinning (SX-EW) production at its Morenci Mine. It was suggested that one or more of the closed smelters, which already have acid plants, could be converted into sulfuric acid producers through the addition of sulfur burning equipment. According to industry estimates, on average it takes 3.5 tons of sulfuric acid to produce 1 ton of electrowon copper (McCoy, 1999). At the rate of 3.5 tons per ton of copper, U.S. SX-EW production is expected to require about 2.1 million tons of sulfuric acid in 1999.

## References Cited

- McCoy, Michael, 1999, Sulfuric market rocked by copper: Chemical and Engineering News, v. 77, no. 40, October 4, p. 13-16.  
Superior Essex, 1999, Superior Essex consolidates plant operations: Fort Wayne, IN, Superior Essex press release, August 11, 2 p.

TABLE 1  
SALIENT STATISTICS OF THE COPPER INDUSTRY IN THE UNITED STATES 1/

(Metric tons, unless noted)

	Source table 2/	1998	1999		
			September	October	January - October
Production:					
Primary:					
Mine, recoverable	(2)	1,860,000	120,000	120,000	1,360,000
Smelter 3/	(3)	1,490,000	71,500	70,900	939,000
Refinery:					
Electrolytic:					
Domestic	(4)	1,290,000	90,800	88,200	938,000
Foreign	(4)	238,000	12,700	16,100	176,000
Electrowon	(4)	609,000	48,300	46,800	491,000
Total	(4)	2,140,000	152,000	151,000	1,610,000
Secondary recoverable copper:					
Refineries	(5)	349,000 r/	21,300 r/	21,000	206,000
Ingot makers 4/	(5)	130,000 r/	10,800 r/	10,800	108,000
Brass and wire-rod mills	(5)	811,000	68,300 r/	71,500	696,000
Foundries, etc. 4/	(5)	51,300 r/	4,280 r/	4,280	42,800
Consumption:					
Apparent	(8)	3,020,000	297,000	NA	NA
Refined (reported)	(7)	2,890,000 r/	252,000	259,000	2,520,000
Purchased copper-base scrap	(9)	1,720,000	149,000	153,000	1,520,000
Stocks at end of period:					
Total refined	(11)	532,000 r/	563,000 r/	571,000	XX
Blister, etc.	(11)	160,000	149,000	141,000	XX
Prices:					
U.S. producer cathode (cents per pound) 5/	(12)	78.641	84.748	83.364	74.238
Imports: 6/					
Ores and concentrates 7/	(14)	217,000	--	NA	NA
Refined	(14)	683,000	90,300	NA	NA
Exports: 6/					
Ores and concentrates 7/	(15)	36,500	3,930	NA	NA
Refined	(15)	86,200	1,180	NA	NA

r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Numbers in parentheses refer to the detailed tables where these data are located.

3/ From domestic and foreign ores.

4/ Monthly data and 1999 cumulative data estimated based on 1998 monthly average.

5/ Source: Platt's Metals Week.

6/ Source: Bureau of the Census.

7/ Copper content.

TABLE 2  
MINE PRODUCTION OF RECOVERABLE COPPER  
IN THE UNITED STATES 1/

(Metric tons)

Period	State		Total
	Arizona	Others 2/	
1998:			
October	96,100	60,100	156,000
November	97,500	57,600 r/	155,000
December	99,900 r/	56,700	157,000
January - October	995,000	556,000	1,550,000
Year	1,190,000	669,000	1,860,000
1999:			
January	99,400	55,500	155,000
February	89,700	48,300	138,000
March	102,000	56,800	159,000
April	95,100	49,300	144,000
May	95,500	47,800	143,000
June	87,300	45,300	133,000
July	86,400	41,400	128,000
August	77,100 r/	41,100	118,000
September	79,200	40,600	120,000
October	80,200	39,800	120,000
January - October	892,000	466,000	1,360,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes production from Alaska, Idaho, Missouri, Montana, Nevada, New Mexico, Tennessee, and Utah.

TABLE 3  
COPPER PRODUCED AT SMELTERS IN THE  
UNITED STATES, BY SOURCE 1/ 2/

(Metric tons, copper content)

Period	Domestic and foreign ores		Total
		Scrap	
1998:			
October	156,000	17,100	173,000
November	134,000	19,000	153,000
December	120,000	18,000	138,000
January - October r/	1,230,000	195,000	1,430,000
Year	1,490,000	232,000	1,720,000
1999:			
January	106,000	18,300	125,000
February	113,000	16,100	129,000
March	116,000	14,700	131,000
April	124,000	15,600	140,000
May	85,400	14,000	99,400
June	77,000	18,600	95,700
July	84,100	18,100	102,000
August	90,600	18,300	109,000
September	71,500	18,400	89,900
October	70,900	18,400	89,300
January - October	939,000	171,000	1,110,000

r/ Revised.

1/ Includes blister, anode and black copper from primary or secondary sources.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 4  
PRODUCTION OF REFINED COPPER, BY SOURCE AND METHOD OF RECOVERY 1/

(Metric tons)

Period	Primary materials				Scrap			Total refined
	Electrolytically refined 2/		Electrowon	Total	Electro-lytically refined 2/	Fire refined	Total	
	Domestic 3/	Foreign						
1998:								
October	107,000	26,100	49,700	183,000	17,500	16,600 r/	34,200 r/	217,000 r/
November	106,000	24,400	51,400	182,000	14,700	9,710 r/	24,400 r/	207,000 r/
December	115,000	22,300	52,500	190,000	17,000	10,400 r/	27,500 r/	217,000 r/
January - October r/	1,070,000	191,000	505,000	1,770,000	170,000	127,000	297,000	2,070,000
Year	1,290,000	238,000	609,000	2,140,000	202,000	147,000 r/	349,000 r/	2,490,000 r/
1999:								
January	85,400	26,700	52,100	164,000	12,500	8,310 r/	20,800 r/	185,000 r/
February	84,200	24,200	47,300	156,000	12,400	10,200 r/	22,600 r/	178,000 r/
March	117,000	25,600	52,400	195,000	14,700	10,000 r/	24,800 r/	220,000 r/
April	111,000	19,100	49,200	179,000	12,100	6,630 r/	18,700 r/	198,000 r/
May	106,000	12,300	51,000	169,000	11,300	5,960 r/	17,200 r/	186,000 r/
June	95,500	12,100	48,900	157,000	12,500	6,100 r/	18,600 r/	175,000 r/
July	77,300	15,100	48,600	141,000	13,500	8,740 r/	22,300 r/	163,000 r/
August	83,200	11,900	46,700 r/	142,000 r/	13,500	5,770 r/	19,300 r/	161,000 r/
September	90,800	12,700	48,300	152,000	13,400	7,880 r/	21,300 r/	173,000 r/
October	88,200	16,100	46,800	151,000	14,100	6,970	21,000	172,000
January - October	938,000	176,000	491,000	1,610,000	130,000	76,600	207,000	1,810,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Based on source of material at smelter level.

3/ Includes fire-refined copper.

TABLE 5  
COPPER RECOVERABLE IN UNALLOYED AND ALLOYED FORM FROM PURCHASED COPPER-BASED SCRAP 1/

(Metric tons, copper content)

Period	Refineries 2/		Ingot makers 3/		Brass and wire-rod mills		Foundries, etc. 3/		Total 4/
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
1998:									
October	10,700 r/	23,400	2,900 r/	7,920 r/	67,000	2,690	881 r/	3,400 r/	119,000 r/
November	5,170 r/	19,200	2,900 r/	7,920 r/	63,400	2,790	881 r/	3,400 r/	106,000 r/
December	5,580 r/	21,900	2,900 r/	7,920 r/	61,800	1,370	881 r/	3,400 r/	106,000 r/
January - October r/	75,500	222,000	29,000	79,200	656,000	26,200	8,810	34,000	1,130,000
Year	86,300 r/	263,000	34,800 r/	95,000 r/	781,000	30,400	10,600 r/	40,800 r/	1,340,000 r/
1999:									
January	4,370 r/	16,400	2,900 r/	7,920 r/	64,600	2,740	881 r/	3,400 r/	103,000
February	5,560 r/	17,000	2,900 r/	7,920 r/	66,400	3,030	881 r/	3,400 r/	107,000 r/
March	6,210 r/	18,600	2,900 r/	7,920 r/	72,800	3,070	881 r/	3,400 r/	116,000 r/
April	4,910 r/	13,800	2,900 r/	7,920 r/	67,200	2,540	881 r/	3,400 r/	104,000 r/
May	4,710 r/	12,500	2,900 r/	7,920 r/	66,600 r/	2,020	881 r/	3,400 r/	101,000 r/
June	4,850 r/	13,700	2,900 r/	7,920 r/	67,400	2,410	881 r/	3,400 r/	103,000
July	6,300 r/	16,000	2,900 r/	7,920 r/	64,300 r/	1,630	881 r/	3,400 r/	103,000
August	5,140 r/	14,100	2,900 r/	7,920 r/	67,700 r/	1,470	881 r/	3,400 r/	103,000
September	6,050 r/	15,200	2,900 r/	7,920 r/	66,900 r/	1,480	881 r/	3,400 r/	105,000 r/
October	5,400	15,600	2,900	7,920	70,100	1,380	881	3,400	108,000
January - October	53,500	153,000	29,000	79,200	674,000	21,800	8,810	34,000	1,050,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Electrolytically refined and fire-refined scrap based on source of material at smelter level.

3/ Data estimated based on 1998 annual data.

5/ Does not include an estimate, based on reported 1998 data, of 3,540 tons per month from new scrap and 2,840 tons per month from old scrap of copper recovered from scrap other than copper-base.

TABLE 6  
PRODUCTION, SHIPMENTS, AND STOCKS OF BRASS AND WIRE-ROD MILL SEMIFABRICATES 1/

(Metric tons, gross weight)

Period	Production		Shipments		Stocks, end of period	
	Brass mills	Wire rod mills	Brass mills	Wire rod mills	Brass mills	Wire rod mills
1998:						
October	138,000	185,000	138,000	185,000	60,300	30,700
November	132,000	181,000	133,000	172,000	59,300	39,800
December	128,000	144,000	125,000	153,000	62,500	30,900
January - October	1,330,000 r/	1,770,000	1,330,000 r/	1,780,000 r/	XX	XX
Year	1,590,000	2,100,000	1,590,000	2,100,000	XX	XX
1999:						
January	138,000	180,000	141,000	174,000	59,500	36,800
February	134,000	178,000	135,000	175,000	58,000	40,100
March	139,000	190,000	146,000	193,000	50,500	37,100
April	144,000 r/	182,000	142,000 r/	184,000	53,300	35,500
May	138,000	181,000 r/	138,000	180,000 r/	53,300	36,400
June	138,000	184,000	140,000	183,000	51,000	37,400
July	122,000 r/	169,000	126,000 r/	172,000	47,600	34,800
August	139,000 r/	187,000	135,000	186,000	51,400	36,200
September	143,000 r/	182,000	139,000 r/	184,000	48,400	34,900
October	140,000	179,000	139,000	181,000	49,100	32,600
January - October	1,370,000	1,810,000	1,380,000	1,810,000	XX	XX

r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 7  
CONSUMPTION OF REFINED COPPER 1/

(Metric tons)

Period and item	Wire rod mills	Brass mills 2/	Other plants 3/	Total
1998:				
October	196,000	57,100	4,730 r/	258,000 r/
November	190,000	52,900	4,730 r/	247,000
December	149,000	51,600	4,730 r/	205,000 r/
January - October	1,830,000	555,000 r/	47,300 r/	2,440,000
Year	2,170,000	659,000	56,700 r/	2,890,000 r/
1999:				
January	186,000	58,400	4,730 r/	249,000
February	185,000	50,900	4,730 r/	240,000
March	209,000	55,500	4,730 r/	270,000 r/
April	184,000	53,800	4,730 r/	243,000 r/
May	184,000	60,100	4,730 r/	249,000
June	189,000	59,900	4,730 r/	254,000
July	174,000	58,500	4,730 r/	238,000 r/
August	202,000	58,400	4,730 r/	265,000 r/
September	188,000	60,700	4,730 r/	253,000
October:				
Cathodes	189,000	39,600	940	229,000
Wire bars	--	--	W	W
Ingots and ingot bars	--	1,520	1,600	3,130
Cakes and slabs	--	10,800	W	10,800
Billets and other	1,630	10,400	2,180	14,200
Total	190,000	62,400	4,730	257,000
January - October	1,890,000	578,000	47,300	2,520,000

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Billets and other."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ In 1998, brass mills consumed 1,500 tons of refined lead, 600 tons of pig tin, 2,400 tons of refined nickel, and 53,200 tons of slab zinc.

3/ Consumption by ingot makers, chemical plants, foundries, and miscellaneous manufacturers is estimated based on 1998 annual data.

TABLE 8  
U.S. APPARENT CONSUMPTION OF COPPER 1/

(Metric tons)

Period	Refined copper production	Copper in old scrap 2/	Refined general imports 3/	Refined exports 3/	Stock change during period	Apparent consumption
1998:						
October	183,000	40,300 r/	53,200	4,990	15,500	256,000
November	182,000	36,200 r/	70,300	3,610	37,100	248,000
December	190,000	37,400 r/	54,700	6,200	64,600	211,000
January - September	1,590,000 r/	349,000 r/	547,000	71,400 r/	101,000	2,310,000 r/
Year	2,140,000	463,000 r/	725,000	86,200	218,000 r/	3,020,000
1999:						
January	164,000	33,300 r/	64,700	2,350	26,000	234,000
February	156,000	34,200 r/	58,500	1,120	24,700	222,000 r/
March	195,000	35,800 r/	86,000	1,840	31,300	284,000
April	179,000	30,500 r/	66,300	1,340	28,000	247,000
May	169,000	28,700 r/	57,100	1,630	3,080	250,000
June	157,000	30,300 r/	60,600	4,240	(24,300)	267,000 r/
July	141,000	31,800	61,000	1,560	(14,400)	247,000
August	142,000 r/	29,700 r/	79,600	1,500	(13,600)	263,000
September	152,000	30,900	85,200	1,180	(29,900)	297,000
October	151,000	31,200	NA	NA	3,700	NA
January - September	1,450,000	285,000	619,000	16,800	30,900	2,310,000

r/ Revised. NA Not available.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes reported monthly production of copper from old scrap of copper-base and estimates for annual reporters and of non-copper-base materials based on 1998 data.

3/ Source: Bureau of the Census.

TABLE 9  
CONSUMPTION OF PURCHASED COPPER-BASE SCRAP 1/

(Metric tons, gross weight)

Period	Smelters and refineries		Ingot makers 2/		Brass and wire-rod mills 3/		Foundries, etc. 2/		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
1998:									
October	11,700 r/	28,600	3,850 r/	11,200 r/	84,800	2,770	1,060 r/	3,780 r/	148,000
November	6,350 r/	29,800	3,850 r/	11,200 r/	80,400	2,870	1,060 r/	3,780 r/	139,000
December	5,980 r/	27,500	3,850 r/	11,200 r/	78,500	1,440	1,060 r/	3,780 r/	133,000
January - October	88,100 r/	306,000 r/	38,500 r/	112,000 r/	828,000	27,100 r/	10,600 r/	37,800 r/	1,450,000 r/
Year	100,000 r/	363,000	46,200 r/	135,000 r/	987,000	31,400	12,700 r/	45,400 r/	1,720,000
1999:									
January	5,440 r/	43,300	3,850 r/	11,200 r/	81,200	2,800	1,060 r/	3,780 r/	153,000
February	6,570 r/	42,800	3,850 r/	11,200 r/	83,900	3,130	1,060 r/	3,780 r/	156,000
March	6,700 r/	39,600	3,850 r/	11,200 r/	92,500	3,170	1,060 r/	3,780 r/	162,000
April	5,430 r/	38,300	3,850 r/	11,200 r/	85,700	2,620	1,060 r/	3,780 r/	152,000
May	5,390 r/	36,400	3,850 r/	11,200 r/	84,300 r/	2,090	1,060 r/	3,780 r/	148,000
June	5,470 r/	36,100	3,850 r/	11,200 r/	85,500	2,500	1,060 r/	3,780 r/	150,000 r/
July	6,470 r/	37,300	3,850 r/	11,200 r/	80,500 r/	1,690	1,060 r/	3,780 r/	146,000
August	5,200 r/	35,700	3,850 r/	11,200 r/	85,700 r/	1,530	1,060 r/	3,780 r/	148,000
September	6,130 r/	36,800	3,850 r/	11,200 r/	84,200 r/	1,550	1,060 r/	3,780 r/	149,000
October	5,980	37,200	3,850	11,200	88,700	1,450	1,060	3,780	153,000
January - October	58,800	384,000	38,500	112,000	852,000	22,500	10,600	37,800	1,520,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data estimated from 1998 annual data.

3/ Consumption at brass and wire-rod mills assumed equal to receipts.

TABLE 10  
CONSUMPTION OF PURCHASED COPPER-BASE SCRAP 1/ 2/

(Metric tons, gross weight)

Scrap type and processor	1998		1999			
	January - October	Year	August	September	October	January - October
No. 1 wire and heavy:						
Smelters and refiners	123,000 r/	139,000	6,010	8,300	8,030	77,900
Brass and wire-rod mills	347,000 r/	411,000	35,700	36,800	37,200	364,000
No. 2 mixed heavy and light:						
Smelters and refiners	169,000 r/	205,000 r/	10,800 r/	10,500 r/	11,000	123,000
Brass and wire-rod mills	26,800	32,600	1,340	1,570	1,490	18,500
Total unalloyed scrap:						
Smelters and refiners	291,000 r/	343,000 r/	16,800 r/	18,800 r/	19,100	201,000
Brass and wire-rod mills	374,000 r/	443,000	37,000	38,300 r/	38,700	382,000
Red brass: 3/						
All plants	53,800 r/	64,500 r/	5,820 r/	5,280 r/	5,630	54,100
Leaded yellow brass:						
All plants	351,000 r/	419,000 r/	35,300 r/	35,100 r/	36,100	353,000
Yellow and low brass:						
All plants	51,200 r/	61,500 r/	6,030 r/	5,910 r/	6,040	61,100
Cartridge cases and brass:						
Smelters and refiners	W	W	W	W	W	W
Brass mills	69,200 r/	81,700	6,880 r/	5,880 r/	7,050	66,100
Auto radiators:						
Smelters and refiners	47,300 r/	56,900 r/	5,570 r/	5,570 r/	5,570	56,000
Bronzes:						
Smelters and refiners	11,000 r/	13,200 r/	1,100 r/	1,100 r/	1,100	11,000
Brass mills	11,300 r/	13,600	842 r/	575 r/	762	8,060
Nickel-copper alloys:						
All plants	14,100 r/	16,900 r/	2,110 r/	1,370 r/	2,560	17,900
Low grade & residues:						
Smelters and refiners	105,000 r/	123,000 r/	23,700 r/	23,700 r/	23,700	239,000
Other alloy scrap: 4/						
Smelters and refiners 5/	17,400 r/	21,300 r/	1,680 r/	1,680 r/	1,680	18,500
Brass mills	3,800	4,620	399	399	425	4,060
Total alloyed scrap:						
Smelters and refiners	253,000 r/	301,000 r/	39,200 r/	39,200 r/	39,200	396,000
Brass mills	481,000 r/	575,000	50,200 r/	47,400 r/	51,400	493,000
Total scrap:						
Smelters and refiners	545,000 r/	644,000 r/	56,000 r/	58,000 r/	58,300	598,000
Brass and wire-rod mills	855,000	1,020,000	87,300 r/	85,700 r/	90,200	875,000

r/ Revised. W Withheld to avoid disclosing company proprietary data.

1/ Does not include: consumption by foundries, chemical plants, and miscellaneous manufacturers, estimated to total about 4,840 tons of scrap per month in 1998; monthly data include estimates of about 17,600 tons of scrap per month consumed by ingot makers and several smelters that report on an annual basis.

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Includes composition turnings, silicon bronze, zincy bronze, railroad car boxes, cocks and faucets, gilding metal, and commercial bronze.

4/ Includes refinery brass, beryllium copper, phosphor copper, and aluminum bronze.

5/ Includes items indicated by symbol "W."

TABLE 11  
COPPER STOCKS AT END OF PERIOD 1/

(Metric tons)

Period	Crude copper 2/	Refined copper						Total refined
		Refineries 3/	Wire rod mills 3/	Brass mills 3/	Other 4/	Comex 5/	LME 6/	
1998:								
October	156,000	35,100	25,100	15,500	3,870 r/	69,400	282,000	430,000 r/
November	182,000	34,300	28,200	17,500	3,870 r/	67,700	316,000	468,000 r/
December	160,000	44,200	37,300	20,800	3,870 r/	85,200	341,000	532,000 r/
1999:								
January	143,000	45,600	43,100	20,600	3,870 r/	92,400	353,000	558,000 r/
February	148,000	44,100	32,400	22,000	3,870 r/	104,000	377,000	583,000 r/
March	132,000	48,200	29,700	21,000	3,870 r/	112,000	400,000	614,000 r/
April	147,000	49,200	27,200	21,200	3,870 r/	120,000	420,000	642,000 r/
May	132,000	43,200	34,700	20,600	3,870 r/	119,000	424,000	645,000 r/
June	134,000	26,600	32,500	18,600	3,870 r/	121,000	418,000	621,000 r/
July	137,000	14,100	37,800	20,500	3,870 r/	109,000	421,000	607,000 r/
August	154,000	18,000	29,700	18,500	3,870 r/	98,700	424,000	593,000 r/
September	149,000	14,400	34,200	16,600	3,870 r/	88,500	406,000	563,000 r/
October	141,000	13,700	33,600	18,400	3,870	82,400	415,000	567,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Copper content of blister and other materials in transit and in process of refining.

3/ Stocks of refined copper as reported; no estimates are made for non-respondents.

4/ Monthly estimates based on reported and 1998 annual data, comprising stocks at secondary smelters, chemical plants, foundries, and miscellaneous manufacturers.

5/ Commodity Exchange Inc., New York.

6/ London Metal Exchange Ltd., U.S. warehouses.

TABLE 12  
AVERAGE PRICE OF COPPER IN THE UNITED STATES AND  
ON THE LONDON METAL EXCHANGE

(Cents per pound)

Period	U.S. producers delivered price cathode 1/	Comex first position 2/	LME cash price Grade A
1998:			
October	75.926	72.266	71.940
November	75.210	71.513	71.377
December	69.915	66.255	66.825
January - December	78.641	75.077	75.008
1999:			
January	68.726	65.066	64.902
February	67.594	63.934	63.974
March	66.164	62.504	62.505
April	70.662	67.002	66.475
May	72.720	69.060	68.528
June	69.037	65.227	64.506
July	79.677	76.017	74.371
August	79.692	75.882	74.715
September	84.748	80.888	79.379
October	83.364	79.300	78.186
January - October	74.238	70.488	69.754

1/ Listed as "U.S. producer cathode."

2/ Listed as "Comex high grade first position."

Sources: Platt's Metals Week and American Metal Market.



TABLE 13  
NEW YORK AVERAGE BUYING PRICES FOR COPPER SCRAP

(Cents per pound)

Month	Brass mills No. 1 scrap	Refiners No. 2 scrap	Dealers (New York)	
			No. 2 scrap	Red brass turnings and borings
1998:				
October	71.00	57.55	47.00	40.00
November	70.37	57.14	46.00	40.00
December	65.40	52.70	41.91	36.73
January - December	73.55	60.19	49.46	40.33
1999:				
January	64.11	51.17	39.32	36.00
February	63.13	51.07	39.00	36.84
March	62.04	50.75	39.00	38.00
April	65.94	54.58	39.00	38.00
May	68.59	56.68	42.80	38.95
June	64.69	52.57	41.55	36.82
July	74.99	62.69	42.71	36.57
August	74.86	61.67	44.00	37.00
September	79.25	63.51	45.00	37.67
October	77.51	61.30	47.00	39.00
January - October	69.51	56.60	41.94	37.49

Source: American Metal Market.

TABLE 14  
U.S. IMPORTS FOR CONSUMPTION OF COPPER (UNMANUFACTURED), BY CLASS 1/

(Metric tons, copper content)

Country or territory	Ore and concentrate			Matte, ash and precipitates			Blister and anodes			Refined		
	1999		January - September	1999		January - September	1999		January - September	1999		January - September
	1998	September		1998	September		1998	September		1998	September	
Argentina	9,930	--	--	--	--	--	--	--	--	--	--	--
Brazil	--	--	--	--	--	--	--	--	--	9,000	262	11,100
Canada	1,690	--	3	140	--	4	82,100	7,320	59,400	265,000	21,000	193,000
Chile	147,000	--	110,000	--	--	--	24,100	8,280	58,400	78,700	32,100	108,000
Denmark	--	--	--	54	--	--	--	--	--	--	--	--
Indonesia	29,400	--	31,900	--	--	--	--	--	--	--	--	--
Japan	--	--	--	240	--	49	(2/)	--	(2/)	8,680	746	3,500
Kazakhstan	--	--	--	--	--	--	--	--	--	--	825	11,000
Malaysia	--	--	--	14	--	60	--	--	--	--	--	--
Mexico	4,980	--	500	998	97	789	29,400	--	17,900	178,000	5,150	88,200
Namibia	--	--	--	--	--	--	3,360	--	--	--	--	--
Netherlands	--	--	--	551	12	369	--	--	--	4,570	--	1,760
Papua New Guinea	5,900	--	--	--	--	--	--	--	--	--	--	--
Peru	18,200	--	--	--	--	--	6,870	--	4,380	128,000	21,800	150,000
Russia	--	--	--	--	--	--	--	--	--	9,170	5,380	34,800
South Africa	--	--	--	--	--	--	2,830	--	--	--	--	1,130
Spain	--	--	--	--	--	--	1,440	--	321	1,300	--	11,000
Taiwan	--	--	--	213	2	135	--	16	16	42	--	62
Other	12	--	12	25 r/	--	9	36	--	96	1,210	3,080	5,990
Total	217,000	--	143,000	2,230	111	1,420	150,000	15,600	140,000	683,000	90,300	620,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 15  
U.S. EXPORTS OF COPPER (UNMANUFACTURED), BY CLASS 1/

(Metric tons, copper content)

Country or territory	Ore and concentrate			Matte, ash and precipitates			Blister and anodes			Refined		
	1999			1999			1999			1999		
	January -			January -			January -			January -		
	1998	September	September	1998	September	September	1998	September	September	1998	September	September
Australia	45	--	--	18	--	2	58	--	259	29	--	--
Belgium	39	--	17	323	--	(2/)	961	50	87	17	--	404
Canada	33,600	3,430	20,300	12,800	631	22,500	16,400	1,270	16,500	16,100	988	10,900
China	--	6	20	--	--	8	63	16	135	360	--	200
France	--	--	1	30	--	--	554	--	160	37	4	29
Germany	1,470	5	68	6,660	64	163	92	40	120	294	75	272
Hong Kong	15	--	33	--	--	--	3,350	314	2,540	1,310	--	200
Italy	34	--	--	--	--	--	354	35	384	69	8	15
Japan	1,050	--	--	34	210	404	695	127	974	17,000	5	78
Korea, Republic of	46	--	14	15	43	43	130	50	423	2,870	4	25
Mexico	97	--	8,480	1,060	10	37	1,330	6	84	11,200	57	1,140
Netherlands	3	--	70	4	--	10	2	--	2	10,100	6	18
Peru	--	495	820	--	--	--	--	--	5	--	--	--
Singapore	--	--	--	6	--	--	726	61	438	687	--	--
Taiwan	(2/)	--	--	--	--	14	1,800	152	1,410	19,100	7	3,150
Thailand	18	--	--	--	--	6	46	--	30	5,830	--	--
Other	152	--	158	1,040 r/	1	76	541	43	570	1,270 r/	20	288
Total	36,500	3,930	30,000	22,000	959	23,200	27,100	2,160	24,100	86,200	1,180	16,800

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 16  
U.S. COPPER SCRAP TRADE 1/

(Metric tons, gross weight)

Country or territory	Imports						Exports					
	Unalloyed			Alloyed			Unalloyed			Alloyed		
	1999			1999			1999			1999		
	January -			January -			January -			January -		
	1998	September	September	1998	September	September	1998	September	September	1998	September	September
Belgium	80	--	--	476	--	213	2,730	35	1,060	434	15	253
Canada	30,900	595	4,690	55,800	3,870	35,100	39,600	4,300	21,500	68,200	2,280	28,500
Chile	3,310	--	5,210	1,440	142	984	--	--	--	3	--	--
China	--	--	--	101	283	989	28,600	4,590	33,700	20,700	1,880	25,500
Colombia	836	100	516	2,560	353	2,110	--	--	--	4	--	--
Costa Rica	800	84	488	778	92	628	--	--	--	--	--	--
Dominican Republic	942	106	952	1,250	96	696	--	--	--	--	--	20
Germany	6	--	--	54	--	41	7,800	145	799	5,920	226	1,490
Guatemala	519	11	36	969	97	1,290	--	--	--	--	--	--
Hong Kong	--	--	--	113	--	11	14,400	836	6,420	23,600	251	2,800
India	--	--	--	--	--	--	3,460	249	2,170	24,900	1,740	19,200
Japan	19	26	234	126	--	49	10,200	951	6,430	10,400	740	8,030
Korea, Republic of	15	--	--	150	18	192	2,720	785	5,710	11,600	1,440	27,200
Malaysia	--	--	--	1,440	66	662	286	--	152	234	--	418
Mexico	12,900	1,540	11,900	35,400	2,430	22,200	1,230	176	449	10,200	1,940	12,900
Singapore	--	--	2	143	--	77	266	251	1,560	173	--	84
Spain	12	--	16	477	58	984	60	--	2,760	1,860	1,030	1,210
Taiwan	109	--	16	720	29	395	2,110	404	3,060	6,210	597	5,960
United Kingdom	--	--	120	1,090	409	1,600	176	--	555	3,890	61	1,590
Venezuela	462	77	398	1,500	305	1,360	--	--	--	37	--	20
Other	3,480 r/	173	1,310	6,740 r/	695	4,940	495 r/	--	1,120	5,000 r/	590	4,540
Total	54,400	2,710	25,900	111,000	8,930	74,500	114,000	12,700	87,400	193,000	12,800	140,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 17  
U.S. COPPER SULFATE TRADE 1/

(Metric tons, gross weight)

Country or territory	Imports								Exports							
	1999								1999							
	1998	First quarter	Second quarter	Third quarter				Year to date	1998	First quarter	Second quarter	Third quarter				Year to date
				July	August	September	Total					July	August	September	Total	
Australia	--	--	--	--	--	--	--	--	78	6	17	--	3	--	3	26
Belgium	715	225	311	97	67	40	203	739	--	--	--	--	--	--	--	--
Canada	5,490	1,430	1,700	513	608	441	1,560	4,690	955	98	205	37	71	29	136	440
Chile	282	124	173	24	24	62	109	406	--	--	--	--	--	--	--	--
China	6,240	238	242	24	108	40	172	653	--	--	--	119	--	--	119	119
Egypt	--	--	--	--	--	--	--	--	7	8	--	--	--	--	--	8
Guatemala	--	--	--	--	--	--	--	--	10	10	--	3	--	11	14	24
Honduras	--	--	--	--	--	--	--	--	--	--	29	--	--	--	--	29
Israel	1,210	305	20	--	3	19	22	347	--	--	--	--	--	--	--	--
Jordan	--	--	--	--	--	--	--	--	--	10	--	--	--	--	--	10
Korea, Republic of	198	--	--	--	--	--	--	--	19	10	--	12	--	--	12	22
Mexico	10,500	2,470	2,130	990	686	800	2,480	7,080	38	5	1	--	12	10	22	28
New Zealand	--	--	--	--	--	--	--	--	--	4	--	--	7	--	7	11
Pakistan	--	--	--	--	--	--	--	--	--	--	19	--	--	--	--	19
Peru	1,740	301	573	176	262	81	518	1,390	--	--	--	--	--	--	--	--
Russia	840	280	--	--	299	28	327	607	--	--	--	--	--	--	--	--
Singapore	--	--	--	--	--	--	--	--	20	55	--	--	19	--	19	74
Spain	--	--	--	--	--	--	--	--	--	--	13	--	--	6	6	19
Taiwan	219	1,190	3,190	124	1,080	442	1,650	6,030	--	--	--	--	--	--	--	--
Other	160	8	52	1	19	24	44	106	215 r/	--	6	6	--	1	7	13
Total	27,600	6,580	8,390	1,950	3,160	1,980	7,080	22,000	1,340	206	291	177	112	56	344	841

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.